

**WHAT IS CLAIMED IS:**

1. A method for beam steering, comprising:  
measuring received signal characteristics of the  
beam;  
providing feedback based on the signal  
characteristics; and  
adapting the beam based on the feedback  
information.
2. The method of Claim 1, further comprising  
using a one-bit punctured on a reverse link channel as  
feedback to indicate quality of a current signal compared  
to a previous signal.
3. The method of Claim 1, further comprising  
transmitting relative strength information as part of the  
feedback information.
4. The method of Claim 1, further comprising  
transmitting the number of multipaths as part of the  
feedback information.
5. The method of Claim 1, further comprising  
transmitting the feedback information on a pre-determined  
schedule.
6. The method of Claim 1, further comprising  
transmitting the feedback information when requested.

7. The method of Claim 1, further comprising steering the beam to ensure a strong signal strength.

8. A method for processing signal characteristic information comprising:

receiving a plurality of multipaths;

measuring a strength of each of the plurality of multipaths;

providing feedback to adapt a beam based on the feedback information.

9. The method of Claim 8, further comprising measuring the number of multipaths that can be demodulated in parallel.

10. The method of Claim 8, further comprising measuring a relative phase offset of each multipath.

11. The method of Claim 8, further comprising determining a change in conditions before providing feedback.

12. The method of Claim 8, further comprising providing feedback on demand.

13. The method of Claim 8, further comprising providing feedback on a periodic basis.

14. A method of determining a beam transmission path comprising:

transmitting a beam sweep through a sector;

determining signal conditions for the beam  
throughout the sweep; and

providing feedback based on the signal conditions  
indicating a preferred transmission path.

15. The method of Claim 14, further comprising  
correlating the feedback with a sweep schedule.

16. The method of Claim 14, wherein the feedback  
includes a relative strength indicator; and further  
comprising comparing the relative strength indicator of the  
signal throughout the beam sweep.

17. The method of Claim 14, wherein the feedback  
comprises a single bit , wherein the single bit indicates  
whether an earliest received signal is the strongest.

18. The method of Claim 14, wherein the feedback  
comprises a single bit which indicates a quality of a  
current signal compared to a previous signal.

19. The method of Claim 14, further comprising  
transmitting a plurality of beam sweeps, wherein a first of  
the plurality of beam sweeps is for demodulation.

20. The method of Claim 14, further comprising  
comparing a relative difference between feedback results to  
determine a preferred transmission path.

21. A method of determining a beam transmission  
path comprising:

transmitting a beam sweep through a plurality of sectors;

determining signal conditions for the beam sweep in each of the plurality of sectors;

selecting a preferred sector based on the signal condition;

dividing the preferred sector into a plurality of sub-sectors;

transmitting a beam sweep through the plurality of sub-sectors;

determining signal conditions for the beam sweep in each of the plurality of sub-sectors; and

selecting a preferred sub-sector based on the signal condition.

22. The method of Claim 21, further comprising transmitting the signal condition via a feedback path.

23. The method of Claim 21, further comprising defining the signal condition as signal strength.

24. The method of Claim 21, further comprising further dividing the sub-sectors to obtain a narrower beam width.

25. A wireless communication system comprising:  
a base station which transmits a signal;

one or more mobile stations which receive the transmitted signal and measures one or more characteristics of the received signal and provide feedback based on the one or more signal characteristics, wherein the base station adapts the beam based on the feedback.

26. The wireless communication system of Claim 25, wherein the feedback is a one-bit punctured on a reverse link channel which indicates a quality of a current signal compared to a previous signal.

27. The wireless communication system of Claim 25, wherein the feedback is a one-bit punctured on a reverse link channel which indicates whether an earliest received signal is the strongest.

28. The wireless communication system of Claim 25, wherein a relative strength indicator is included as the one or more signal characteristics.

29. The wireless communication system of Claim 25, wherein a number of multipaths is provided as part of the feedback information.

30. The wireless communication system of Claim 25, wherein the feedback information is transmitted on a pre-determined schedule.

31. The wireless communication system of Claim 25, wherein the feedback information is transmitted when requested.

32. The wireless communication system of Claim 25, wherein the base station steers the beam to ensure a strong signal strength.